ATTACHMENT J1

Westover ARB Electric Distribution System

TABLE OF CONTENTS

List of Tables

J1 Westover ARB Electric Distribution System

J1.1 Westover ARB Overview

Westover ARB is located in Chicopee, Massachusetts, 90 miles west of Boston. The Base comprises 2,402 acres, and has approximately 150 buildings and other facilities occupying more than 1,500,000 square feet. It is home to C-5A Galaxy aircraft that are part of the 439th Military Airlift Wing.

Westover ARB has a work force of more than 570 civilians, and 480 Air Reserve technicians. In addition, more than 3,700 Air Force reservists, National Guardsmen, Marine reservists, and Navy Seabee reservists train at the Base.

Westover Air Force Base was activated in 1940 to fulfill the need for an Air Force base in the northeastern United States. It served as a bomber training base and a point of embarkation and debarkation during World War II, as a headquarters of the Military Airlift Command through 1955, as a staging point for the Berlin Airlift, and then as a major base of operations for the Strategic Airlift Command until 1974. Since that year, Westover has been an Air Reserve Base. From 1974 to 1987 C-130 aircraft were assigned to Westover ARB; in 1987, C-5A Galaxy aircraft were assigned to the Base and remain there today.

Projected future mission requirements have necessitated the renovation or demolition of older facilities and the construction of new facilities. The Westover ARB Capital Improvements Program (CIP) emphasizes consolidating existing facilities and maximizing their utilization as much as possible. Over the next 5 years, key projects planned for Westover ARB, if implemented, will increase the total square footage of buildings and facilities on Base by approximately 2 to 3 percent.

J1.2 Electric Distribution System Description

J1.2.1 Electric Distribution System Fixed Equipment Inventory

The Westover ARB electric distribution system consists of all appurtenances physically connected to the distribution system from the point in which the distribution system enters the Installation and Government ownership currently starts to the point of demarcation, defined by the Right of Way. The system may include, but is not limited to, transformers, circuits, protective devices, utility poles, ductbanks, switches, street lighting fixtures, and other ancillary fixed equipment. The actual inventory of items sold will be in the bill of sale at the time the system is transferred. The following description and inventory is included to provide the Contractor with a general understanding of the size and configuration of the distribution system. The Government makes no representation that the inventory is accurate. The Contractor shall base its proposal on site inspections, information in the technical library, other pertinent information, and to a lesser degree the following description and inventory. Under no circumstances shall the Contractor be entitled to any

service charge adjustments based on the accuracy of the following description and inventory.

Specifically excluded from the electric distribution system privatization are:

- Ramp and airfield lighting
- All street lighting fixtures not directly mounted to power poles
- Approximately 3,500 linear feet of 13.8-kV distribution circuit owned by the City of Chicopee. This circuit loops through the northwest portion of the Base to feed the main substation. To the west of the Westover ARB regulator yard, this circuit is located on the top of the utility poles above the Westover ARB 13.8-kV Circuit #5 and is of Hendrix spacer wire construction. To the east of the main substation, this circuit is mounted on CELD utility poles and is also of Hendrix spacer wire construction.

J1.2.1.1 Description

The City of Chicopee Municipal Light Department supplies power to Westover ARB through a 13.8-kilovolt (kV) distribution circuit into the Base-owned regulator yard. The regulator yard contains the Base metering facilities, two reclosers, three single-phase voltage regulators and associated switches. The two reclosers feed out from the yard as circuits #5 and #6, providing power at 13.8 kV to a good portion of the Base. Circuit #6 also provides power to the 13.8-kV-to-4.8-kV switching station located along Hangar Avenue. The 13.8-kV-to-4.8 kV switching station is made up of two 5-megavolt-ampere (MVA) station transformers, a section of 15-kV rated metal-enclosed switchgear for serving the high side of the transformers and a section of 5-kV rated metal-enclosed switchgear with eight feeder breakers for serving the 4160-V feeder loads. Base ownership of the electric facilities starts at the supply side of the regulator yard.

A good portion of the system is overhead construction with the exception of a section of underground located around the air field, ramp and along Hangar Avenue. Of those portions which are underground, approximately 20 percent is under roadway or parking areas with approximately another 5 percent under runways.

There is no SCADA system for remote operation or monitoring of the electric utility system. The positioning of switches throughout the distribution system in most cases provides some degree of backup from one circuit to another.

Planned future major construction includes tying-in Buildings 3284, 3286, 3287, 3288, and 3290 to the Westover ARB electrical distribution system. No other major maintenance, repair, or replacement projects are planned.

J1.2.1.2 Inventory

Table 1 provides a general listing of the major electric distribution system fixed assets for the Westover ARB electric distribution system included in the sale.

TABLE 1
Fixed Inventory
Electric Distribution System Westover ARB

Component	Size	Quantity	Unit	Approximate Year of Construction
Regulator Yard				
3-phase vacuum recloser	15 kV, 3500 A	2	ea	1994
Potential transformer	15 kV	3	ea	1994
Current transformer	15 kV	3	ea	1994
Fused cutout		4	ea	1994
Station service transformer, 1-phase, oil-filled	15 kVA	1	ea	1994
1-phase cutout switch	15 kV	9	ea	1994
Wood pole	40 ft	4	ea	1994
Single phase voltage regulator	250 kVA	3	ea	1994
Chain link fence	8 ft high	220	lf	1994
Yard gravel		52	cy	1994
Recloser pad		2	ea	1994
Ground wire	#1/0 bare copper	272	lf	1994
Cadweld ground connectors		5	ea	1994
Ground rod	8 ft	1	ea	1994
15 kV Switchgear				
Outdoor metal enclosed interrupter switch	15 kV, 1200 A	3	ea	1993
Outdoor metal enclosed vacuum circuit breaker, with relaying	15 kV, 1200 A	2	ea	1993
Transition Enclosures		2	ea	1993
Concrete pad	27 ft X 24 ft			
3-phase power transformers 13.8 kV-4800 V	5 MVA	2	ea	1993
5 kV Switchgear				
Control Power Transformers, Dry Type	15 kVA, 1-phase	2	ea	1988
Potential Transformers	5 kV	2	ea	1988
Current Transformers	5 kV	38	ea	1988
Vacuum Circuit Breaker, with relaying	7.2 kV, 1200 A	10	ea	1988
NICD Batteries		18	ea	1988
Battery Charger		1	ea	1988
Lightning Arrestors	2400 V	6	ea	1988

TABLE 1
Fixed Inventory
Electric Distribution System Westover ARB

Component	Size	Quantity	Unit	Approximate Year of Construction
Cable Terminators	5 kV, #500	6	ea	1988
	5 kV, #350	6	ea	1988
	5 kV, #250	6	ea	1988
	5 kV, #4/0	6	ea	1988
Underground Ductbank				
Manhole	(4 ft X 6 ft X 6 ft)	66	ea	1945
	(4 ft X 6 ft X 6 ft)	24	ea	1988
	(4 ft X 6 ft X 6 ft)	14	ea	1991
Ductbank (1 X 2), 4-in. PVC concrete encased conduit, 3-ft cover	(1 X 2)	20,145	lf	1945
	(1 X 2)	10,800	lf	1988
	(1 X 2)	6,400	lf	1991
Ductbank (1 X 3), 4-in. PVC concrete encased conduit, 3-ft cover	(1 X 3)	1,589	lf	1945
Ductbank (2 X 2), 4-in. PVC encased conduit, 3-ft cover	(2 X 2)	2,970	lf	1986
Ductbank (2 X 3), 4-in. PVC encased conduit, 3-ft cover	(2 X 3)	1,727	lf	1986
Ductbank (2 X 4), 4-in. PVC encased conduit, 3-ft cover	(2 X 4)	1,758	lf	1986
Underground Circuits	**AWG**			
3-phase, 3-wire circuit, 5kV, XLP copper, total conductor length	#350	12,189	sclf	1988
	#4/0	18,453	sclf	1988
	#4/0	16,800	sclf	1991
	#2/0	2,400	sclf	1991
	#4	66,300	sclf	1988
			sclf	
Overhead Circuits				
3-phase, 3-wire circuit, aerial, copper, total conductor length	#6	31,050	sclf	1995
	#2	9,450	sclf	1995
	#8	4,920	sclf	1955

TABLE 1
Fixed Inventory
Electric Distribution System Westover ARB

Component	Size	Quantity	Unit	Approximate Year of Construction
3-phase, 3-wire circuit, aerial, aluminum, total conductor length	#1/0	7,200	sclf	1995
	#2/0	11,280	sclf	1955
3-phase, 3-wire circuit, Hendrix, aluminum, total conductor length	#3/0	49,770	sclf	1995
600V Triplex Secondary	#6	3,188	sclf	1991
600V Quadplex Secondary	#3	813	sclf	1991
Transformers				
3-phase, oil-filled	75 kVA	5	ea	1991
	112.5 kVA	4	ea	1991
	112.5 kVA	1	ea	2002
	150 kVA	3	ea	1991
	225 kVA	15	ea	1991
	300 kVA	5	ea	1991
	500 kVA	6	ea	1991
	500 kVA	1	ea	2002
	750 kVA	7	ea	1991
	1000 kVA	1	ea	2002
	2500 kVA	1	ea	1991
1-phase, oil-filled	15 kVA	4	ea	1991
	25 kVA	8	ea	1991
	37.5 kVA	4	ea	1991
	75 kVA	12	ea	1991
	100 kVA	3	ea	1991
	225 kVA	3	ea	1991
Utility Hardware and Components				
Pad, Concrete, 25 sf at 46 ea		1,225	sf	1991
Cable terminators, UG, 1 per phase at transformer		147	ea	1991
Pole grounding		152	ea	1991

TABLE 1
Fixed Inventory
Electric Distribution System Westover ARB

Component	Size	Quantity	Unit	Approximate Year of Construction
Transformers, grounding		49	ea	1991
Capacitors	0.3 MVAR	3	ea	1991
Single crossarm, with hardware	8 ft	47	ea	1991
Double crossarm, with hardware	8 ft	143	ea	1991
Single guy		41	ea	1991
Double guy		46	ea	1991
Fused cutout		159	ea	1991
Lightning arrestor		136	ea	1991
Potential transformer	15 kV	10	ea	1991
Current transformer	15 kV	13	ea	1991
HPS flood light	250 W	15	ea	1991
HPS street light	150 W	13	ea	1991
Gang operated sectionalizing switch	15 kV	6	ea	1991
Utility Poles	**Height (ft)**			
Wood pole	30	1	ea	1991
	35	46	ea	1991
	40	105	ea	1991
Meters				
Electric meters		12	ea	1989

A = ampere
AL = aluminum
ASCR = aluminum conductor steel reinforced
AWG = American Wire Gauge
CO = copper
ea = each
ft = feet
KV = kilovolt
KVA = kilovolt ampere
lf = linear feet
MVAR = megavolt amp reactive
Nom kVA = nominal kilovolt-amperes
PVC = polyvinyl chloride
sclf = single conductor linear feet
sf = square feet
UG = Underground
V = volt
W = watt
XLP = cross-link polyethylene insulated

J1.2.2 Electric Distribution System Non-Fixed Equipment and Specialized Tools

Table 2 lists other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment, vehicles, and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment, vehicles, and tools.

TABLE 2
Spare Parts
Electric Distribution System Westover ARB

Qty	Item	Description	Make/Model	Remarks
There are no spare parts included with the system to be privatized.				

TABLE 3
Specialized Vehicles and Tools
Electric Distribution System Westover ARB

Qty	Description	Location	Maker
There are no specialized vehicles or tools included with the system to be privatized.			

J1.2.3 Electric Distribution System Manuals, Drawings, and Records

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
Manuals, Drawings, and Records
Electric Distribution System Westover ARB

Qty	Item	Description	Remarks
1	Drawings	Electrical Distribution System	WST 4043, 12 sheets
1	Drawings	Primary Electrical Distribution System	WST 3994, 10 sheets

J1.3 Specific Service Requirements

The service requirements for the Westover ARB electric distribution system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Westover ARB electric distribution system and are in addition to those found in Section C. If there is a conflict between requirements described below and Section C, the requirements listed below take precedence over those found in Section C.

- New Owner must be able to coordinate with Westover ARB to provide/isolate a Base-specified building for training purposes and training exercises.
- IAW Paragraph C.9.8, Exercises and Crisis Situations Requiring Utility Support, the Contractor shall provide support as directed by Westover ARB Civil Engineer Control Center for exercises and crisis situations.
- The Contractor shall enter into a Memorandum of Understanding with the Westover ARB Fire Department for fire protection of all facilities included in the purchase of the utility. The Memorandum of Understanding shall be completed during the transition period and a copy provided to the Contracting officer.
- Contractor shall abide by Westover ARB fire protection requirements. The utility system purchased by the Contractor may include facilities. These facilities may or may not include fire alarm systems. Where required by federal, state or local regulations, the Contractor shall maintain the fire alarm system for all facilities owned and operated by the Contractor. The Contractor shall permit Fire Department personnel access to their facilities to perform fire inspections and emergency response.
- For all privatized lighting fixtures, operations and maintenance of lighting fixtures includes the purchase and replacement of lighting elements and the removal and disposal of replaced lighting elements. The contractor shall maintain all privatized lighting fixtures in accordance with International Electrical Standards (IES).
- All electric meters installed by the Contractor shall include demand registers unless otherwise agreed to by both parties.
- The Contractor shall provide monthly meter reading reports IAW paragraph J1.6.
- The Contractor shall keep a meter book(s) and record monthly consumption and demand (if applicable) for each meter being read. The Contractor shall coordinate with the Government to determine the format of the meter books to be submitted.
- When new meters are installed, to include meters installed for temporary service connections, the Contractor shall include with the meter reading report a separate report identifying the new meters installed during the prior month. The Contractor shall coordinate with the Government to determine the format of the report to be submitted.
- IAW paragraph C.3.4 and J1.7, the Contractor shall coordinate with Westover ARB Energy Manager so that the Contractor's service and systems support the Base's energy management program goals.
- The Contractor shall coordinate any changes to the street lights or security lights that may effect blackout procedures during government operations (C9.8) with the Westover ARB Civil Engineer.
- The Contractor shall obtain all necessary authorizations, permits and line locates in order to perform excavation at Westover ARB.
- The Contractor shall support the Westover ARB digging permit process by routinely accepting and promptly processing digging permit requests which may impact on the

integrity of the Contractor's utility system and/or the safety of the requestors. The Contractor shall conform to the Westover ARB digging permit process or submit to the Contracting Officer for approval a methodology for accepting, processing, approving, and listing reason(s) for disapproving digging permits.

- The Contractor is responsible for all supporting utilities that may be required to own, operate and maintain the utility system being privatized. For example, electricity is needed to operate wastewater lift station pumps. Supporting utilities are defined as the supply of electricity, natural gas, water, or wastewater collection and any infrastructure or materials necessary to connect to the supply of electricity, natural gas, water, or wastewater collection. The Contractor shall coordinate with the Westover ARB Civil Engineer and the Contracting Officer for any supporting utilities to be provided by the Government.

J1.4 Current Service Arrangement

Westover ARB receives power (commodity supply) from the City of Chicopee Municipal Light Department.

Annual electric power consumption at Westover ARB in FY 2002 was approximately 16.6 million kilowatt-hours (kWh). The highest monthly consumption for the year was approximately 1,697,000 kWh in January. The lowest monthly consumption for the year was approximately 1,195,000 kWh in October. The peak demand for the year was 3,266 kW, occurring in August.

J1.5 Secondary Metering

J1.5.1 Existing Secondary Meters

Table 5 provides a listing of the existing (at the time of contract award) secondary meters that will be transferred to the Contractor. The Contractor shall provide meter readings for all secondary meters IAW Paragraph C.3 and J1.6 below.

TABLE 5
Existing Secondary Meters
Electric Distribution System Westover ARB

Meter Location	Meter Description
Building 1307, SABER Control, east side of building	
Building 1310, vacant, northeast side next to steps	
Building 1700, Gym, Mechanical Room	
Building 1900, vacant, north side, dock area	
Building 2416	
Building 2426, Avionics, east side next to steps	
Building 3102, Helicopter Simulator	

TABLE 5
Existing Secondary Meters
Electric Distribution System Westover ARB

Meter Location	Meter Description
Building 5200, Base Exchange	
Building 5402, Bowling Center	
Building 5425, Shoppette, north side, rear entrance	
Building 6640, Club	
Navy Housing, end of Cowan Avenue, Brice Street Pole	

J1.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 6**. New secondary meters shall be installed IAW Paragraph C.13, Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Paragraphs C.3 and J1.6 below.

TABLE 6
New Secondary Meters
Electric Distribution System Westover ARB

Meter Location	Meter Description
There are no new secondary meters required for the system to be privatized.	

J1.6 Monthly Submittals

The Contractor shall provide the Government monthly submittals for the following:

1. Invoice (IAW G.2). The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

   Name: Base Civil Engineering
   Address: Westover ARB
   250 Patriot Avenue
   Chicopee, MA 01022-1670

2. Outage Report. The Contractor's monthly outage report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

   Name: Base Civil Engineering
   Address: Westover ARB
   250 Patriot Avenue
   Chicopee, MA 01022-1670

3. Meter Reading Report. The monthly meter reading report shall show the current and previous month readings for all secondary meters. The Contractor's monthly meter reading report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to:

   Name: Base Civil Engineering
   Address: Westover ARB
   250 Patriot Avenue
   Chicopee, MA 01022-1670

4. System Efficiency Report. If required by Paragraph C.3, the Contractor shall submit a system efficiency report in a format proposed by the Contractor and accepted by the Contracting Officer. System efficiency reports shall be submitted by the 25th of each month for the previous month. System efficiency reports shall be submitted to:

   Name: Base Civil Engineering
   Address: Westover ARB
   250 Patriot Avenue
   Chicopee, MA 01022-1670

J1.7 Energy Saving Projects

IAW Paragraph C.3, Requirement, the following projects have been implemented on the distribution system by the Government for energy conservation purposes.

- There are no energy savings projects associated with the system to be privatized.

J1.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Westover ARB boundaries.

J1.9 Off-Installation Sites

No off-installation sites are included in the sale of the Westover ARB electric distribution system.

J1.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 7** provides a listing of service connections and disconnections required upon transfer.

TABLE 7
Service Connections and Disconnections
Electric Distribution System Westover ARB

Location	Description
There are no service connections and disconnections for the system to be privatized.	

J1.11 Government Recognized System Deficiencies

Table 8 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the Westover ARB electric distribution system. If the system is sold, the Government will not accomplish these planned improvements. The Contractor shall make a determination as to its actual need to accomplish and the timing of any and all such planned improvements. Capital upgrade projects shall be proposed through the Capital Upgrades and Renewal and Replacement Plan process and will be recovered through Schedule L-3. Renewal and Replacement projects will be recovered through Sub-CLIN AB.

TABLE 8
System Deficiencies
Electric Distribution System Westover ARB

Project Location	Project Description
Upgrade electrical system	Replace portions of electric YTPM 00-0001P1al system operating at 4800 V to underground electric (project numbers YTPM 00-0001P1, YTPM 00-0001P2, YTPM 00-0001P3, YTPM 00-0001P4, YTPM 00-0001P5 and YTPM 00-0001P6).